

SEQUENCE LISTING

<110> APPLICANT: Van der Ploeg, Leonardus
 Chen, Howard Y.
 Chen, Airu S.

<120> TITLE: MELANOCORTIN-3 RECEPTOR DEFICIENT CELLS
 , NON-HUMAN TRANSGENIC ANIMALS AND METHODS OF SELECTING
 COMPOUNDS WHICH REGULATE BODY WEIGHT

<130> DOCKET/FILE REFERENCE: 20561Y

<160> NUMBER OF SEQUENCES: 15

<170> SOFTWARE: FastSEQ for Windows Version 4.0

<210> SEQ ID NO:1

<211> LENGTH: 1675

<212> TYPE: DNA

<213> ORGANISM:Mus musculus (house mouse)

<400> SEQ ID NO:1

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gctcaggacc	ctgcaggagc	cgcagctggg	actggacctg	ctgttaacca	tgaactcttc	120
ctgctgcctg	tcttctgttt	ctccgatgct	gcctaaccctc	tctgagcacc	ctgcagcccc	180
tcctgcccagc	aaccggagcg	gcagtggggtt	ctgtgagcag	gtcttcatca	agccggaggt	240
cttcctggct	ctgggcatcg	tcagttctgtat	ggaaaacatc	ctgggtatcc	tggctgtgg	300
caggaatggc	aacctgcact	ctcccattgt	cttcttcctg	tgcagcctgg	ctgcagccga	360
catgctggtg	agcctgtcca	actccctgg	gaccatcatg	atgcctgtga	tcaacagcga	420
ctccctgacc	ttggaggacc	agtttatcca	gcacatggat	aatatcttcg	actctatgtat	480
ttgcatctcc	ctgggtggct	ccatctgcaa	cctcctggcc	attgccatcg	acaggtacgt	540
caccatcttc	tatgcccttc	ggtaccacag	catcatgaca	gttaggaaag	ccctcacctt	600
gatcggggtc	atctgggtct	gctgccccat	ctgcggcg	atgttcatca	tctactccga	660
gagcaagatg	gtcatctgt	gtctcatcac	catgttcttc	gccatggtc	tcctcatggg	720
caccctataat	atccacatgt	tcctcttcgc	caggctccac	gtccagcga	tcgcagtgt	780
gccccctgct	ggcgtgggt	ccccacagca	gcactcctgc	atgaaggggg	ctgtcaccat	840
cactatcc	ctgggtgttt	tcatcttc	ctggcgct	ttcttcctcc	acctggccct	900
catcatcacc	tgccccacca	atccctactg	catctgctac	acggccatt	tcaacaccta	960
cctgggttctc	atcatgtgca	actccgtcat	cgacccccc	atctacgcct	tccgcagcc	1020
ggagctgcgc	aacacgttca	aggagattct	ctgcggctgc	aacagcatga	acttgggcta	1080
ggatgcctgt	ggaggtgttc	cacatccagc	caagagacaa	aaacaacgc	cagacggac	1140
gtaaaagggt	gttagggatct	ggaactgtgc	ttggcttcgt	ctgttaagctc	gtggcccttt	1200
gcagacggga	cacggcgtag	gatgggctgt	ctgtgaggat	ctgtgtgtgg	gtaagtca	1260
ttgatcttagc	acatagcctg	gaagaatcag	gcaaaagcagc	cctgagtgtc	atctgttttc	1320
attgcttaggc	accagggtt	tgtggccct	gcctgcttat	tggctttgt	ccagtaactg	1380
tgcttcaagc	caaccagacc	ggagggtct	cgtgagcaga	aagagtgtt	agacttccgg	1440
caagcatcct	ggctcacagc	ggccacccctc	tgaccactac	cgggagagct	ttgcacatat	1500
tctgtggag	attgagtgaa	gccctgaaaa	caatgtgata	tttgcgtc	ccttccagaa	1560
cttacatctg	tgccagcctc	cccgaaacccc	tgcacagaga	catgaccccc	ttctccctgt	1620
gccgttgtca	tggttgttat	tatttttttt	gttttttttt	ttaaaatcta	agctt	1675

<210> SEQ ID NO:2
 <211> LENGTH: 323
 <212> TYPE: PRT
 <213> ORGANISM:Mus musculus (house mouse)

<400> SEQ ID NO:2
 Met Asn Ser Ser Cys Cys Leu Ser Ser Val Ser Pro Met Leu Pro Asn
 1 5 10 15
 Leu Ser Glu His Pro Ala Ala Pro Pro Ala Ser Asn Arg Ser Gly Ser
 20 25 30
 Gly Phe Cys Glu Gln Val Phe Ile Lys Pro Glu Val Phe Leu Ala Leu
 35 40 45
 Gly Ile Val Ser Leu Met Glu Asn Ile Leu Val Ile Leu Ala Val Val
 50 55 60
 Arg Asn Gly Asn Leu His Ser Pro Met Tyr Phe Phe Leu Cys Ser Leu
 65 70 75 80
 Ala Ala Ala Asp Met Leu Val Ser Leu Ser Asn Ser Leu Glu Thr Ile
 85 90 95
 Met Ile Ala Val Ile Asn Ser Asp Ser Leu Thr Leu Glu Asp Gln Phe
 100 105 110
 Ile Gln His Met Asp Asn Ile Phe Asp Ser Met Ile Cys Ile Ser Leu
 115 120 125
 Val Ala Ser Ile Cys Asn Leu Leu Ala Ile Ala Ile Asp Arg Tyr Val
 130 135 140
 Thr Ile Phe Tyr Ala Leu Arg Tyr His Ser Ile Met Thr Val Arg Lys
 145 150 155 160
 Ala Leu Thr Leu Ile Gly Val Ile Trp Val Cys Cys Gly Ile Cys Gly
 165 170 175
 Val Met Phe Ile Ile Tyr Ser Glu Ser Lys Met Val Ile Val Cys Leu
 180 185 190
 Ile Thr Met Phe Phe Ala Met Val Leu Leu Met Gly Thr Leu Tyr Ile
 195 200 205
 His Met Phe Leu Phe Ala Arg Leu His Val Gln Arg Ile Ala Val Leu
 210 215 220
 Pro Pro Ala Gly Val Val Ala Pro Gln Gln His Ser Cys Met Lys Gly
 225 230 235 240
 Ala Val Thr Ile Thr Ile Leu Leu Gly Val Phe Ile Phe Cys Trp Ala
 245 250 255
 Pro Phe Phe His Leu Val Leu Ile Ile Thr Cys Pro Thr Asn Pro
 260 265 270
 Tyr Cys Ile Cys Tyr Thr Ala His Phe Asn Thr Tyr Leu Val Leu Ile
 275 280 285
 Met Cys Asn Ser Val Ile Asp Pro Leu Ile Tyr Ala Phe Arg Ser Leu
 290 295 300
 Glu Leu Arg Asn Thr Phe Lys Glu Ile Leu Cys Gly Cys Asn Ser Met
 305 310 315 320
 Asn Leu Gly

<210> SEQ ID NO:3
 <211> LENGTH: 1080
 <212> TYPE: DNA
 <213> ORGANISM:Homo sapien

<400> SEQ ID NO:3
 atgagccatcc aaaagaagta tctggaggga gatttgtct ttcctgttag cagcagcagc 60
 ttcctacgga ccctgctgga gccccagctc ggatcagccc ttctgacagc aatgaatgct 120
 tcgtgctgcc tgccctctgt tcagccaaca ctgcctaatt gctcggagca cctccaagcc 180
 cctttttca gcaaccagag cagcagcgcc ttctgtgaa c aggtttcat caagccccag 240
 attttccatgt ctctggccat cgtcagtctg ctggaaaaca tcctggttat cctggccgtg 300

gtcaggaacg gcaacctgca	ctcccccgtat	tacttcttc	tctgcagcct	ggcggtggcc	360
gacatgctgg	taagtgtgtc	caatgccctg	gagaccatca	tgatgccat	420
gactaccta	ccttcgagga	ccagtttac	cagcacatgg	acaacatctt	480
atctgcatct	ccctgggtgc	ctccatctgc	aacctcctgg	ccatgcgcgt	540
gtcaccatct	tttacgcgt	ccgctaccac	agcatcatga	ccgtgaggaa	600
ttgatcgtgg	ccatctgggt	ctgctgcggc	gtctgtggcg	tggtgttcat	660
gagagaaaa	ttgtcattgt	gtgcctcatc	accatgttct	tcgcccattat	720
ggcacccctct	acgtgcacat	gttcccttt	gcccggctgc	acgtcaagcg	780
ctgccacctg	ccgacgggg	ggcccccacag	caacactcat	catagcagca	840
atcaccatcc	tcctgggcgt	gttcatcttc	tgctgggccc	ccttcttcct	900
ctcatcatca	cctgccccac	caaccctac	tgcatctgtct	acactgccc	960
tacctggtcc	tcatcatgtg	caactccgtc	atcgaccac	tcatctacgc	1020
ctgaaattgc	gcaacacctt	taggagatt	ctctgtggct	gcaacggcat	1080

<210> SEQ ID NO:4

<211> LENGTH: 360

<212> TYPE: PRT

<213> ORGANISM:Homo sapien

<400> SEQ ID NO:4

Met	Ser	Ile	Gln	Lys	Tyr	Leu	Glu	Gly	Asp	Phe	Val	Phe	Pro	Val
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Ser	Ser	Ser	Ser	Phe	Leu	Arg	Thr	Leu	Leu	Glu	Pro	Gln	Leu	Gly	Ser
															30

Ala	Leu	Leu	Thr	Ala	Met	Asn	Ala	Ser	Cys	Cys	Leu	Pro	Ser	Val	Gln
															45

Pro	Thr	Leu	Pro	Asn	Gly	Ser	Glu	His	Leu	Gln	Ala	Pro	Phe	Phe	Ser
															60

Asn	Gln	Ser	Ser	Ser	Ala	Phe	Cys	Glu	Gln	Val	Phe	Ile	Lys	Pro	Glu
															80

Ile	Phe	Leu	Ser	Leu	Gly	Ile	Val	Ser	Leu	Leu	Glu	Asn	Ile	Leu	Val
															95

Ile	Leu	Ala	Val	Val	Arg	Asn	Gly	Asn	Leu	His	Ser	Pro	Met	Tyr	Phe
															110

Phe	Leu	Cys	Ser	Leu	Ala	Val	Ala	Asp	Met	Leu	Val	Ser	Val	Ser	Asn
															125

Ala	Leu	Glu	Thr	Ile	Met	Ile	Ala	Ile	Val	His	Ser	Asp	Tyr	Leu	Thr
															140

Phe	Glu	Asp	Gln	Phe	Ile	Gln	His	Met	Asp	Asn	Ile	Phe	Asp	Ser	Met
															160

Ile	Cys	Ile	Ser	Leu	Val	Ala	Ser	Ile	Cys	Asn	Leu	Leu	Ala	Ile	Ala
															175

Val	Asp	Arg	Tyr	Val	Thr	Ile	Phe	Tyr	Ala	Leu	Arg	Tyr	His	Ser	Ile
															190

Met	Thr	Val	Arg	Lys	Ala	Leu	Thr	Leu	Ile	Val	Ala	Ile	Trp	Val	Cys
															205

Cys	Gly	Val	Cys	Gly	Val	Val	Phe	Ile	Val	Tyr	Ser	Glu	Ser	Lys	Met
															220

Val	Ile	Val	Cys	Leu	Ile	Thr	Met	Phe	Phe	Ala	Met	Met	Leu	Leu	Met
															240

Gly	Thr	Leu	Tyr	Val	His	Met	Phe	Leu	Phe	Ala	Arg	Leu	His	Val	Lys
															255

Arg	Ile	Ala	Ala	Leu	Pro	Pro	Ala	Asp	Gly	Val	Ala	Pro	Gln	Gln	His
															270

Ser	Cys	Met	Lys	Gly	Ala	Val	Thr	Ile	Thr	Ile	Leu	Leu	Gly	Val	Phe
															285

Ile	Phe	Cys	Trp	Ala	Pro	Phe	Phe	Leu	His	Leu	Val	Ile	Ile	Thr	
															300

Cys	Pro	Thr	Asn	Pro	Tyr	Cys	Ile	Cys	Tyr	Thr	Ala	His	Phe	Asn	Thr
															320

Tyr Leu Val Leu Ile Met Cys Asn Ser Val Ile Asp Pro Leu Ile Tyr
 325 330 335
 Ala Phe Arg Ser Leu Glu Leu Arg Asn Thr Phe Arg Glu Ile Leu Cys
 340 345 350
 Gly Cys Asn Gly Met Asn Leu Gly
 355 360

<210> SEQ ID NO:5
 <211> LENGTH: 28
 <212> TYPE: DNA
 <213> ORGANISM:Artificial Sequence

 <220> FEATURE:
 <223> OTHER INFORMATION: oligonucleotide

 <400> SEQ ID NO:5
 gatgagagaa gactggagag agagggtc

28

<210> SEQ ID NO:6
 <211> LENGTH: 27
 <212> TYPE: DNA
 <213> ORGANISM:Artificial Sequence

 <220> FEATURE:
 <223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:6
 gaagaagtagc atgggagagt gcagggtt

27

<210> SEQ ID NO:7
 <211> LENGTH: 27
 <212> TYPE: DNA
 <213> ORGANISM:Artificial Sequence

 <220> FEATURE:
 <223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:7
 gatgagagaa gactggagga gagggtc

27

<210> SEQ ID NO:8
 <211> LENGTH: 24
 <212> TYPE: DNA
 <213> ORGANISM:Artificial Sequence

<220> FEATURE:
 <223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:8
 taccgggtgga tgtggaatgt gtgc

24

<210> SEQ ID NO:9
 <211> LENGTH: 45
 <212> TYPE: DNA
 <213> ORGANISM:Artificial Sequence

<220> FEATURE:
 <223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:9
agccaggagtc accaggatgt tttccatcag actgacgatg cccag 45

<210> SEQ ID NO:10
<211> LENGTH: 45
<212> TYPE: DNA
<213> ORGANISM:Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:10
tgcccatgag gaggcaccatg gcgaagaaca tggtgatgag gcaca 45

<210> SEQ ID NO:11
<211> LENGTH: 45
<212> TYPE: DNA
<213> ORGANISM:Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:11
atgatgagga ccaggtggag gaagaaaaggc gcccagcaga agatg 45

<210> SEQ ID NO:12
<211> LENGTH: 25
<212> TYPE: DNA
<213> ORGANISM:Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:12
ctaaccataaa gaaaatcagca gcccc 25

<210> SEQ ID NO:13
<211> LENGTH: 25
<212> TYPE: DNA
<213> ORGANISM:Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:13
aggaaagtat acatgccatg gtgg 25

<210> SEQ ID NO:14
<211> LENGTH: 25
<212> TYPE: DNA
<213> ORGANISM:Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:14
ctaaccataaa gaaaatcagca gcccc 25

<210> SEQ ID NO:15
<211> LENGTH: 24
<212> TYPE: DNA
<213> ORGANISM:Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:15
taccgggtgga tgtggaatgt gtgc